

ORIGINAL

OPEN MEETING



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MEMORANDUM

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Arizona Corporation Commission

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2007 AUG -7 P 4:44

TO: THE COMMISSION

AUG 07 2007

AZ CORP COMMISSION  
DOCKET CONTROL

FROM: Utilities Division

DATE: August 7, 2007

DOCKETED BY	
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RE: IN THE MATTER OF THE APPLICATION OF THE ARIZONA PUBLIC SERVICE COMPANY FOR EXPEDITED APPROVAL OF MODIFICATIONS OF CERTAIN DEMAND-SIDE MANAGEMENT PROGRAMS (DOCKET NO. E-01345A-05-0477)

On June 18, 2007, Arizona Public Service Company ("APS" or "the Company") filed an application requesting expedited approval of modifications to certain of its demand-side management ("DSM") programs. On March 26, 2007, APS had refiled its Non-Residential DSM programs for final Commission approval ("13-month refiling") and, in that filing, the Company requested certain changes to some of its non-residential and residential DSM programs, based upon 12 months of experience with those programs.

The program changes for which APS is seeking expedited approval in the current matter affect the Company's 1) Non-Residential Existing Facilities Program ("NR Existing Program") and its 2) Residential Existing Homes Heating, Ventilating, and Air-Conditioning program ("Residential HVAC Program"). At this time, Staff is making recommendations only regarding the Company's proposed modifications to those two programs as outlined in the Company's June 18, 2007, application for expedited approval. Staff will not make a recommendation at this time regarding final approval of the NR Existing Program. Recommendations regarding APS' request for final approval of its Non-Residential programs will be made when Staff completes its updated analysis of all of the measures comprising the Non-Residential programs in response to the 13-month refiling.

**BACKGROUND**

On July 1, 2005, APS filed an application for approval of its DSM Portfolio Plan and related programs ("Portfolio Plan"). The Portfolio Plan includes various DSM programs that provide energy-efficiency opportunities for both residential and non-residential participants. The Portfolio Plan was filed in response to APS' DSM obligations provided for in Commission Decision No. 67744. APS filed revisions to its original filing on November 14, 2005, and November 21, 2005.

On August 17, 2005, the Commission approved the lighting portion of APS' Residential Consumer Products DSM Program in Decision No. 68064. On February 23, 2006, in Decision No. 68488, the Commission granted interim approval for six APS Non-Residential DSM

programs and further ordered APS to refile the Non-Residential portion of its Portfolio Plan within 13 months, for final Commission approval. On April 12, 2006, the Commission approved two additional APS' Residential DSM programs in Decision No. 68648 and its Low Income Weatherization program in Decision No. 68647. The Residential DSM order included requirements for certain residential DSM program information to be included in APS' 13-month refiling.

APS docketed its 13-month refiling of its Non-Residential DSM programs required by Decision No. 68488 on March 26, 2007. The Company's application, filed in Docket No. E-01345A-05-0477, requested final approval of its Non-Residential DSM programs and also requested certain DSM program modifications. On the same date, APS made a similar filing in Docket No. E-01345A-05-0429, the Residential High-Efficiency Consumer Products DSM docket under which the compact fluorescent light bulbs ("CFL") program was approved. In this filing, APS proposed a reallocation of funding to the CFL Program. APS has requested consolidation of those dockets.

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#### **NON-RESIDENTIAL EXISTING FACILITIES PROGRAM**

To accommodate customer demand, APS is seeking Commission authorization for additional funding of \$3.5 million to be used for customer incentives for the NR Existing Program. The Company is also seeking Commission authorization to remove the existing 52 percent cap on incentives as a percentage of the total program budget for the requested additional \$3.5 million.

The NR Existing Program provides opportunities for large (peak demand greater than 200 kW) non-residential customers to save energy in this higher energy-use sector. The program provides incentives for owners and operators of existing facilities to install prescriptive measures for energy-efficiency improvements in lighting, HVAC, motors, and refrigeration applications. In addition to its prescriptive measures, the program provides incentives for custom-efficiency measures and for certain studies.

Customer interest and activity in the NR Existing Program has been higher than anticipated. Through June 2007, APS has accepted 323 applications for participation in the program for which \$1,917,385 in incentives has already been paid, \$2,346,033 has been reserved, and an additional \$465,681 is currently under review, for a total potential of \$4,729,099 in incentive payments. APS reports that schools, retail businesses, office buildings and medical facilities are the top participating sectors, and lighting measures are the most

THE COMMISSION

August 7, 2007

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NON-RESIDENTIAL EXISTING FACILITIES PROGRAM				
Demand and Energy Savings Through June 2007				
	kW Savings	Annual kWh Savings	Lifetime kWh Savings	Source
January-June 2006	-	-	-	Semi-Annual Report
July-December 2006	1,830	11,229,594	173,829,841	Semi-Annual Report
January-June 2007 *	2,601	22,234,670	282,230,971	Un-audited Projection
Total	4,431	33,464,670	456,060,812	

\* Preliminary un-audited numbers

The NR Existing Program appears to be off to a rapid start. The program results in the table above have been compiled from the Company's Semi-Annual Reports for January through June 2006 and July through December 2006, and from preliminary (un-audited) numbers supplied by APS for January through June 2007. The numbers reported in the Semi-Annual Reports reflect the demand and energy savings achieved from customer DSM projects that are completed and for which incentives have been paid. Net benefits to society are available only through December 2006 at this time and have been reported by APS to be \$2,235,692.

NON-RESIDENTIAL EXISTING FACILITIES PROGRAM		
Original Program Budget Approved February 23, 2006		
Administration & Planning	\$676,007	10.0%
Program Marketing	\$615,448	9.1%
Program Implementation	\$1,674,527	24.8%
Rebates & Incentives	\$3,422,287	50.6%
Training & Technical Assistance	\$236,603	3.5%
Consumer Education	\$135,203	2.0%
Total	\$6,760,075	100%

APS' budget for rebates and incentives in the NR Existing Program was originally approved at \$3,422,287, as shown above. The Commission also approved limited budget flexibility for the Company to shift up to a maximum of 25 percent of budgeted funds from one program to another program in the same sector (in this case the Non-Residential sector). In January 2007, the Company exercised its budget flexibility and shifted \$1,490,000 from the Large New Construction Program and \$890,000 from the Small Business Program to enhance funds available to meet customer demand for the NR Existing Program.

NON-RESIDENTIAL EXISTING FACILITIES PROGRAM		
Budget Shifting in January 2007		
	Rebates & Incentives Budget	Total NR Existing Program Budget
NR Existing Program (before shifting)	\$3,422,287	\$6,760,075
Shifted from Small Business Program	\$450,340	\$890,000
Shifted from Large new Construction Program	\$753,940	\$1,490,000
NR Existing Program (after shifting)	\$4,626,567	\$9,140,750

APS states that at the end of May 2007, 85 percent of the NR Existing Program incentive budget was either paid to customers or reserved for customers with pre-approved applications. Staff updated that calculation through June 2007 and found that 92.2 percent of the Rebate and Incentive budget was either paid to customers or reserved for customers with pre-approved applications. Of the incentive dollars in the Rebate and Incentive budget after shifting funds from the other two programs (\$4,626,567<sup>1</sup>), 41.4 percent have been paid (\$1,917,385), 50.7 percent are reserved (\$2,346,033), and 7.8 percent remain in the budget uncommitted (\$363,149). Staff is concerned that the uncommitted funds in the Rebate and Incentive budget are rapidly nearing zero at a time when interest and participation in the program are at a high level.

Staff is favorably impressed with the level of energy efficiency this DSM program has generated and is interested in assuring that the program continues to provide demand, energy, and net benefits to customers and society. Staff believes that the momentum of this program should not be interrupted for lack of funds to provide interested customers with program-defined incentives. Although Staff finds the \$3.5 million of increased funding for rebates and incentives proposed by the Company to be a somewhat arbitrary and difficult number to forecast, Staff views it as reasonable considering that there are only five remaining months in the budget period ending December 31, 2007, and there are \$2,346,033 in rebates and incentives currently reserved.

Therefore, Staff recommends that the Commission authorize \$3.5 million additional annual DSM funding for NR Existing Program rebates and incentives, and that APS modify its Rebates and Incentives program budget for 2007 and subsequent years to reflect the additional funding. Staff believes authorizing additional funding would be beneficial because the NR Existing Program consists of cost-effective measures, therefore, incremental measures would increase kW and kWh savings and net benefits to society. For clarification, this would be additional funding that would be added to the overall DSM spending budget of \$16 million per year required by Decision No. 67744. The funds would not be shifted from other non-residential programs. The additional funding would increase the total Portfolio Plan overall budget from

<sup>1</sup> APS allocated the shifted funds to the NR Existing budget subcategories according to the percentage of each budget subcategory of the original budget. Therefore, 50.6 percent of the shifted funds went to the Rebate and Incentive subcategory increasing it by \$1,204,280 from \$3,422,287 to \$4,626,567.

\$16 million per year by \$3.5 million for a new total Portfolio Plan budget of \$19.5 million per year.

In Decision No. 68488, which granted interim approval for the Non-Residential DSM programs, the Commission adopted a Staff recommendation that the combined expenditure for Rebates and Incentives for the non-residential programs from 2005 – 2007 be capped at the current estimated Non-Residential program level, which is 52 percent of the Non-Residential program budget. The purpose of that recommendation, in the early years of the program, was to ensure that the nature of the programs and their incentives would not be changed without Commission approval. Staff was concerned that APS' DSM spending goal could provide motivation for the Company to maximize rebates and incentives paid without regard to potential DSM energy-efficiency savings.

However, it appears that APS has implemented and managed the NR Existing DSM program in accordance with Commission guidelines. Now that most of the implementation costs of the NR Existing Program have been borne, Staff believes that a higher percentage of overall program costs for rebates and incentives is appropriate. A well-implemented DSM program should become more efficient through time such that a higher percentage of program funds would be spent directly to motivate customers to install energy-efficient measures. This would result in more energy efficiency per dollar spent. Staff believes that the current 52 percent cap on Rebates and Incentives for the NR Existing Program, an established and fully-implemented working DSM program, could be counterproductive both now and in the future.

NON-RESIDENTIAL EXISTING FACILITIES PROGRAM Rebates and Incentives as a Percentage of Total Program Budget			
	Rebates & Incentives Budget	Total Program Budget	Rebates & Incentives Percent of Total
Original Budget	\$3,422,287	\$6,760,075	50.6%
Budget after Shifting	\$4,626,567	\$9,140,750	50.6%
Budget + \$3.5 Million	\$8,126,567	\$12,640,750	64.3%

The above chart illustrates the percent that the Rebates and Incentives budget is to the overall NR Existing Program budget: as originally budgeted in Decision No. 68488; after funds were shifted from the Small Business Program and the Large New Construction Program; and if the recommendation to add \$3.5 million to the Rebates & Incentives Budget were adopted. Note that the percentage did not change after the budget shifting in January 2007 because the shifted funds were allocated to the NR Existing budget subcategories according to the percentage of each budget subcategory of the original total program budget. If the recommendation to add \$3.5 million is adopted, and APS were to spend those funds, the Company would be in violation of the 52 percent cap unless that cap is modified or removed.

For the reasons outlined above, Staff recommends that the existing 52 percent budget cap for the combined expenditure for Rebates and Incentives be removed from the NR Existing Program beginning in the 2007 budget year.

### **RESIDENTIAL EXISTING HOMES HVAC PROGRAM**

APS is seeking authorization to modify the EER criteria for air-conditioning and heat pump units to qualify for its High Efficiency AC Rebate component of the Residential HVAC Program. The reason for the Company's request is that it is difficult for customers or contractors to find qualifying equipment that meets the APS Residential HVAC Program rebate requirements for package HVAC systems. APS reports that this has resulted in leaving a portion of the market unserved, limiting potential energy savings, and frustrating both customers and contractors.

The Residential HVAC Program was conceived to be a whole-system approach to improving the performance of residential HVAC systems by providing incentives to encourage installation of energy-efficient HVAC systems; by providing incentives to encourage proper sizing and installation of heating and air-conditioning systems through quality installation practices; by encouraging system testing, maintenance, and repair of existing HVAC systems; by providing technical assistance for HVAC contractors; by providing education for consumers about the benefits of energy-efficient heating and cooling systems; by providing contractor training through the Company's Qualified Contractor Program; and by providing referrals to contractors who meet strict program requirements for professional standards.

The roll-out and performance of the Residential HVAC Program to date has met some of its objectives, but the program has not been without problems. In some respects, the program appears to have been very effective as reported in the July through December 2006 DSM Semi-Annual Report. Rebates were paid to 1,379 customers for installation of high efficiency HVAC equipment; there are 52 contractors participating in the APS Qualified Contractor program; approximately 300 HVAC technicians participated in APS sponsored training courses in order to meet APS Qualified Contractor program training requirements; APS provided over 5,400 referrals to customers seeking HVAC service, repair, or replacement of their home central HVAC system. According to the Company, the 1,379 new central HVAC units installed by customers under the program have produced demand savings of 2,150 kW, annual energy savings of 5,282,000 kWh, and energy savings over the life of the measures of 79,236,000 kWh.

Staff is concerned, however, that the potential savings that could have been realized may not have materialized. This is because the Quality Installation and HVAC System Testing and Repair measures ordered in Decision No. 68648, April 12, 2006, have not been implemented within 15 months after the Order. These are important components of the Residential HVAC Program, all of which are needed to work together to deliver maximum potential energy efficiency. For example, if a new energy-efficient central heat pump is installed without a Quality Installation that includes a sizing calculation, the unit could be oversized resulting in the customer (and the utility) receiving only partial benefits or no benefits over the 15-20 year old unit that the new heat pump replaced. Similarly, if a new energy-efficient system is installed in a home that has leaking ducts, the expected efficiency will not be realized. Staff has discussed the issue of the Quality Installation measure and the System Testing and Repair measure with APS. Staff was informed by APS that the Quality Installation measures will be implemented

throughout the APS service territory by August 1, 2007. Concentrated efforts to begin implementation of the HVAC System Testing and Repair measure, however, were initiated only recently, and no firm date was provided by APS for final implementation of that measure.

<b>RESIDENTIAL EXISTING HOMES HVAC PROGRAM</b> Program Measures Involving Rebate/Incentive Payments to Customers Required by Decision No. 68648, April 12, 2006		
<b>Measure Description</b>	<b>Technical Specifications</b>	<b>Incentive</b>
High SEER/EER Equipment Split/Packaged Systems	Tier 1=> 14 SEER/12 EER Tier 2=> 16 SEER/14 EER	\$250 per unit \$400 per unit
Quality Installation	Must be completed by an APS Qualified Contractor. Must meet Energy Star Quality Installation standards when they are adopted.	\$100 per unit
HVAC System Testing and Repair	Contractors must document home performance test and repairs using approved tools and methods including before and after verification.	75% of incremental cost of the work performed with a cap of \$250 per unit

The High Efficiency AC Rebate component of the Residential HVAC Program was implemented on June 1, 2006. From the date of implementation through June 2007 (including preliminary data for January – June, 2007), over 3,000 rebates were paid out of a potential market of about 30,000 units replaced annually in the APS service territory. APS reports that these replacements are anticipated to save 157,603,320 kWh over the expected lifetime of the equipment. Recognizing that the program was still in its ramp-up period, Staff nonetheless believes the results of the High Efficiency AC Rebate component may not have been as effective as they could have been. APS acknowledges that there were at least two problems with this program component.

Where most customers were aware of Seasonal Energy Efficiency Ratio ("SEER") as an energy-efficiency indicator for central HVAC units, most customers and even many contractors were unfamiliar with EER. Furthermore, the EER values for specific HVAC units were difficult to find. Thus, providing data to confirm that equipment meets the minimum EER requirement to qualify for a rebate proved to be an impediment to the delivery of the program from the contractor's perspective. In APS' 13-month refiling, the Company requested changes to remove the EER requirement. However, the EER requirement is a measure of energy efficiency at a constant 95 degrees as opposed to SEER which is a measure of energy efficiency over an entire cooling season, and thus the EER requirement is very relevant to the warmer Arizona desert region climate. Furthermore, the Federal Tax Credit program is based upon a combination of SEER/EER requirements. Probably because of the Federal Tax Credit program, the primary database that contractors use to verify a wide range of equipment information (the ARI Directory of Certified Product Performance) was updated in March 2007 to include significantly more information on equipment EER levels. Recognizing that this problem had essentially resolved itself, APS withdrew its request to remove the EER as a measure of energy efficiency related to the High Efficiency AC Rebate component of its Residential HVAC Program.

Another problem that the High Efficiency AC Rebate program experienced was that customers and contractors were having difficulty finding package air-conditioning and heat pump units available on the marketplace that would meet the APS rebate specifications. Indeed, there are only 173 package models on the market that qualify for the Tier 1 \$250 rebate and zero package models that qualify for the Tier 2 \$400 rebate. There was less of a problem in finding qualifying split systems that met the rebate requirements, because split systems are inherently more efficient and generally have higher SEER and EER specifications. In this application for expedited approval of modifications of certain DSM programs, the Company is proposing modifications to the program's EER requirements as outlined in the following table to rectify the problem.

<b>RESIDENTIAL EXISTING HOMES HVAC PROGRAM</b>		
Current and APS Proposed SEER and EER Requirements		
<b>Current Minimum Levels</b>	<b>Proposed Minimum Levels</b>	<b>Incentive</b>
14 SEER / 12 EER	14 SEER / 11.5 EER	Tier 1 = \$250
16 SEER / 14 EER	16 SEER / 12.25 EER	Tier 2 = \$400

Under the APS proposed requirements, there would be 304 package models available that qualify for the Tier 1 \$250 rebate and nine package models that qualify for the Tier 2 \$400 rebate.

Staff investigated the possibility of recommending separate SEER/EER requirements for package systems and for split systems. Staff also looked at the United States Department of Energy requirements which specified separate requirements for central air conditioning systems and for heat pump systems. In both cases, the complexities of the requirements overshadowed the advantages. Staff also looked at air-conditioning rebate DSM programs in effect in other southwestern states and concluded that there were many and diverse ways to specify program requirements, but no consensus or preferred method surfaced. Staff spoke with local heating and air-conditioning contractors to gain their perspective on the problems and potential solutions regarding APS' program. Staff concluded that the contractors feel that APS' proposed solution to lower the EER requirement would solve the equipment availability problem.

Both APS and Staff have performed analyses of the new requirements to determine if the measures would remain cost-effective at the new EER levels, and have found that they do remain cost-effective. Staff performed the Societal Cost Test at each of six relevant SEER/EER levels, and found each combination to be cost-effective.

Staff recommends that APS reduce the minimum EER required to qualify for a rebate under the Company's "High Efficiency AC Rebate" component of its Residential HVAC Program, to (14 SEER and) 11.5 EER for a Tier 1 \$250 rebate and to (16 SEER and) 12.25 EER for a Tier 2 \$400 rebate, with a conditional effective date.

However, Staff is concerned that all of the measures ordered in Decision No. 68648, April 12, 2006, are meant to work together to realize the full potential of energy savings in the



THE COMMISSION


August 7, 2007

Page 9

Residential HVAC Program. The Quality Installation measure is most directly associated with realizing the full potential for energy savings from new HVAC equipment installed under the rebate program. The HVAC System Testing and Repair measure is more closely associated with gaining maximum efficiency from existing central heating and cooling systems, but is nonetheless an important component of the program and could be relevant to new installations as well.

Staff believes that it may not be advantageous to correct the EER problem, resulting in more installations of energy-efficient equipment and more rebates paid, if the Quality Installation measure is not available to ensure that the full energy-efficiency potential of those incremental units is realized. It is possible that the incremental Tier 1 and Tier 2 rebates paid would not generate the expected energy efficiency that ratepayers would be ultimately paying for in the form of rebates. APS has indicated to Staff that the Quality Installation measure would be implemented statewide by August 1, 2007, and hopefully this will have been accomplished prior to Commission action on this Application. In order to ensure that these two measures are in lockstep, however, Staff recommends that any reductions to minimum EER requirements to qualify for a rebate, under the Company's "High Efficiency AC Rebate" component of its Residential HVAC Program ordered herein, become effective only concurrent with or after the Quality Installation measure is fully implemented, meaning that the measure is readily available to all residential customers throughout APS' service territory statewide.

Staff has become aware of considerable activity currently underway at APS to implement the HVAC System Testing and Repair measure. APS is working with the Arizona Department of Commerce Energy Office and is planning to partner with Energy Star for branding the program and with Foundation for Senior Living Home Improvements ("FSL Home Improvements") for contractor training and referrals. FSL Home Improvements has expanded beyond its initial work in low income weatherization and senior home improvements and has become a local authority in home energy-efficiency testing, repair, and training. Staff recommends that APS place a high priority on implementing the HVAC System Testing and Repair measure as soon as possible and report its progress to Staff no less than monthly until the measure is fully implemented statewide.

for   
Ernest G. Johnson  
Director  
Utilities Division

EGJ:JDA:lhmvFW

ORIGINATOR: Jerry D. Anderson

1 **BEFORE THE ARIZONA CORPORATION COMMISSION**

2 MIKE GLEASON  
Chairman  
3 WILLIAM A. MUNDELL  
Commissioner  
4 JEFF HATCH-MILLER  
Commissioner  
5 KRISTIN K. MAYES  
Commissioner  
6 GARY PIERCE  
Commissioner

7  
8 IN THE MATTER OF THE APPLICATION )  
OF THE ARIZONA PUBLIC SERVICE )  
9 COMPANY FOR EXPEDITED APPROVAL )  
10 OF MODIFICATIONS OF CERTAIN )  
DEMAND-SIDE MANAGEMENT )  
11 PROGRAMS )

DOCKET NO. E-01345A-05-0477

DECISION NO. \_\_\_\_\_

ORDER

12  
13 Open Meeting  
August 21 and 22, 2007  
14 Phoenix, Arizona

15 BY THE COMMISSION:

16 FINDINGS OF FACT

17 1. Arizona Public Service Company ("APS" or the "Company") is certificated to  
18 provide electric service as a public service corporation in the State of Arizona.

19 2. On June 18, 2007, APS filed an application requesting expedited approval of  
20 modifications to certain of its demand-side management ("DSM") programs. On March 26, 2007,  
21 APS had refiled its Non-Residential DSM programs for final Commission approval ("13-month  
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23 and residential DSM programs, based upon 12 months of experience with those programs.

24 3. The program changes for which APS is seeking expedited approval in the current  
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Total	\$6,760,075	100%

14. APS' budget for rebates and incentives in the NR Existing Program was originally approved at \$3,422,287, as shown above. The Commission also approved limited budget flexibility for the Company to shift up to a maximum of 25 percent of budgeted funds from one program to another program in the same sector (in this case the Non-Residential sector). In

January 2007, the Company exercised its budget flexibility and shifted \$1,490,000 from the Large New Construction Program and \$890,000 from the Small Business Program to enhance funds available to meet customer demand for the NR Existing Program.

15. NR Existing Program – Budget Shifting in January 2007.

NON-RESIDENTIAL EXISTING FACILITIES PROGRAM Budget Shifting in January 2007		
	Rebates & Incentives Budget	Total NR Existing Program Budget
NR Existing Program (before shifting)	\$3,422,287	\$6,760,075
Shifted from Small Business Program	\$450,340	\$890,000
Shifted from Large new Construction Program	\$753,940	\$1,490,000
NR Existing Program (after shifting)	\$4,626,567	\$9,140,750

16. APS states that at the end of May 2007, 85 percent of the NR Existing Program incentive budget was either paid to customers or reserved for customers with pre-approved applications. Staff updated that calculation through June 2007 and found that 92.2 percent of the Rebate and Incentive budget was either paid to customers or reserved for customers with pre-approved applications. Of the incentive dollars in the Rebate and Incentive budget after shifting funds from the other two programs (\$4,626,567<sup>1</sup>), 41.4 percent have been paid (\$1,917,385), 50.7 percent are reserved (\$2,346,033), and 7.8 percent remain in the budget uncommitted (\$363,149). Staff is concerned that the uncommitted funds in the Rebate and Incentive budget are rapidly nearing zero at a time when interest and participation in the program are at a high level.

17. Staff is favorably impressed with the level of energy efficiency this DSM program has generated and is interested in assuring that the program continues to provide demand, energy, and net benefits to customers and society. Staff believes that the momentum of this program should not be interrupted for lack of funds to provide interested customers with program-defined incentives. Although Staff finds the \$3.5 million of increased funding for rebates and incentives proposed by the Company to be a somewhat arbitrary and difficult number to forecast, Staff views

<sup>1</sup> APS allocated the shifted funds to the NR Existing budget subcategories according to the percentage of each budget subcategory of the original budget. Therefore, 50.6 percent of the shifted funds went to the Rebate and Incentive subcategory increasing it by \$1,204,280 from \$3,422,287 to \$4,626,567.

1 it as reasonable considering that there are only five remaining months in the budget period ending  
2 December 31, 2007, and there are \$2,346,033 in rebates and incentives currently reserved.

3 18. Therefore, Staff recommends that the Commission authorize \$3.5 million additional  
4 annual DSM funding for NR Existing Program rebates and incentives, and that APS modify its  
5 Rebates and Incentives program budget for 2007 and subsequent years to reflect the additional  
6 funding. Staff believes authorizing additional funding would be beneficial because the NR  
7 Existing Program consists of cost-effective measures, therefore, incremental measures would  
8 increase kW and kWh savings and net benefits to society. For clarification, this would be  
9 additional funding that would be added to the overall DSM spending budget of \$16 million per  
10 year required by Decision No. 67744. The funds would not be shifted from other non-residential  
11 programs. The additional funding would increase the total Portfolio Plan overall budget from \$16  
12 million per year by \$3.5 million for a new total Portfolio Plan budget of \$19.5 million per year.

13 19. In Decision No. 68488, which granted interim approval for the Non-Residential  
14 DSM programs, the Commission adopted a Staff recommendation that the combined expenditure  
15 for Rebates and Incentives for the non-residential programs from 2005 – 2007 be capped at the  
16 current estimated Non-Residential program level, which is 52 percent of the Non-Residential  
17 program budget. The purpose of that recommendation, in the early years of the program, was to  
18 ensure that the nature of the programs and their incentives would not be changed without  
19 Commission approval. Staff was concerned that APS' DSM spending goal could provide  
20 motivation for the Company to maximize rebates and incentives paid without regard to potential  
21 DSM energy-efficiency savings.

22 20. However, it appears that APS has implemented and managed the NR Existing DSM  
23 program in accordance with Commission guidelines. Now that most of the implementation costs  
24 of the NR Existing Program have been borne, Staff believes that a higher percentage of overall  
25 program costs for rebates and incentives is appropriate. A well-implemented DSM program  
26 should become more efficient through time such that a higher percentage of program funds would  
27 be spent directly to motivate customers to install energy-efficient measures. This would result in  
28 more energy efficiency per dollar spent. Staff believes that the current 52 percent cap on Rebates

1 and Incentives for the NR Existing Program, an established and fully-implemented working DSM  
2 program, could be counterproductive both now and in the future.

3 21. NR Existing Program – Rebates and Incentives as a Percentage of Total Program  
4 Budget.

NON-RESIDENTIAL EXISTING FACILITIES PROGRAM Rebates and Incentives as a Percentage of Total Program Budget			
	Rebates & Incentives Budget	Total Program Budget	Rebates & Incentives Percent of Total
Original Budget	\$3,422,287	\$6,760,075	50.6%
Budget after Shifting	\$4,626,567	\$9,140,750	50.6%
Budget + \$3.5 Million	\$8,126,567	\$12,640,750	64.3%

9  
10 22. The above chart illustrates the percent that the Rebates and Incentives budget is to  
11 the overall NR Existing Program budget: as originally budgeted in Decision No. 68488; after funds  
12 were shifted from the Small Business Program and the Large New Construction Program; and if  
13 the recommendation to add \$3.5 million to the Rebates & Incentives Budget were adopted. Note  
14 that the percentage did not change after the budget shifting in January 2007 because the shifted  
15 funds were allocated to the NR Existing budget subcategories according to the percentage of each  
16 budget subcategory of the original total program budget. If the recommendation to add \$3.5  
17 million is adopted, and APS were to spend those funds, the Company would be in violation of the  
18 52 percent cap unless that cap is modified or removed.

19 23. For the reasons outlined above, Staff has recommended that the existing 52 percent  
20 budget cap for the combined expenditure for Rebates and Incentives be removed from the NR  
21 Existing Program beginning in the 2007 budget year.

## 22 RESIDENTIAL EXISTING HOMES HVAC PROGRAM

23 24. APS is seeking authorization to modify the EER criteria for air-conditioning and  
24 heat pump units to qualify for its High Efficiency AC Rebate component of the Residential HVAC  
25 Program. The reason for the Company's request is that it is difficult for customers or contractors  
26 to find qualifying equipment that meets the APS Residential HVAC Program rebate requirements  
27 for package HVAC systems. APS reports that this has resulted in leaving a portion of the market  
28 unserved, limiting potential energy savings, and frustrating both customers and contractors.



1           25.     The Residential HVAC Program was conceived to be a whole-system approach to  
2 improving the performance of residential HVAC systems by providing incentives to encourage  
3 installation of energy-efficient HVAC systems; by providing incentives to encourage proper sizing  
4 and installation of heating and air-conditioning systems through quality installation practices; by  
5 encouraging system testing, maintenance, and repair of existing HVAC systems; by providing  
6 technical assistance for HVAC contractors; by providing education for consumers about the  
7 benefits of energy-efficient heating and cooling systems; by providing contractor training through  
8 the Company's Qualified Contractor Program; and by providing referrals to contractors who meet  
9 strict program requirements for professional standards.

10           26.     The roll-out and performance of the Residential HVAC Program to date has met  
11 some of its objectives, but the program has not been without problems. In some respects, the  
12 program appears to have been very effective as reported in the July through December 2006 DSM  
13 Semi-Annual Report. Rebates were paid to 1,379 customers for installation of high efficiency  
14 HVAC equipment; there are 52 contractors participating in the APS Qualified Contractor program;  
15 approximately 300 HVAC technicians participated in APS sponsored training courses in order to  
16 meet APS Qualified Contractor program training requirements; APS provided over 5,400 referrals  
17 to customers seeking HVAC service, repair, or replacement of their home central HVAC system.  
18 According to the Company, the 1,379 new central HVAC units installed by customers under the  
19 program have produced demand savings of 2,150 kW, annual energy savings of 5,282,000 kWh,  
20 and energy savings over the life of the measures of 79,236,000 kWh.

21           27.     Staff is concerned, however, that the potential savings that could have been realized  
22 may not have materialized. This is because the Quality Installation and HVAC System Testing  
23 and Repair measures ordered in Decision No. 68648, April 12, 2006, have not been implemented  
24 within 15 months after the Order. These are important components of the Residential HVAC  
25 Program, all of which are needed to work together to deliver maximum potential energy efficiency.  
26 For example, if a new energy-efficient central heat pump is installed without a Quality Installation  
27 that includes a sizing calculation, the unit could be oversized resulting in the customer (and the  
28 utility) receiving only partial benefits or no benefits over the 15-20 year old unit that the new heat

1 pump replaced. Similarly, if a new energy-efficient system is installed in a home that has leaking  
2 ducts, the expected efficiency will not be realized. Staff has discussed the issue of the Quality  
3 Installation measure and the System Testing and Repair measure with APS. Staff was informed by  
4 APS that the Quality Installation measures will be implemented throughout the APS service  
5 territory by August 1, 2007. Concentrated efforts to begin implementation of the HVAC System  
6 Testing and Repair measure, however, were initiated only recently, and no firm date was provided  
7 by APS for final implementation of that measure.

8 28. Residential HVAC Program – Program Measures Involving Rebate/Incentive  
9 Payments to Customers.

RESIDENTIAL EXISTING HOMES HVAC PROGRAM Program Measures Involving Rebate/Incentive Payments to Customers Required by Decision No. 68648, April 12, 2006		
Measure Description	Technical Specifications	Incentive
High SEER/EER Equipment Split/Packaged Systems	Tier 1=> 14 SEER/12 EER Tier 2=> 16 SEER/14 EER	\$250 per unit \$400 per unit
Quality Installation	Must be completed by an APS Qualified Contractor. Must meet Energy Star Quality Installation standards when they are adopted.	\$100 per unit
HVAC System Testing and Repair	Contractors must document home performance test and repairs using approved tools and methods including before and after verification.	75% of incremental cost of the work performed with a cap of \$250 per unit

17  
18 29. The High Efficiency AC Rebate component of the Residential HVAC Program was  
19 implemented on June 1, 2006. From the date of implementation through June 2007 (including  
20 preliminary data for January – June, 2007), over 3,000 rebates were paid out of a potential market  
21 of about 30,000 units replaced annually in the APS service territory. APS reports that these  
22 replacements are anticipated to save 157,603,320 kWh over the expected lifetime of the  
23 equipment. Recognizing that the program was still in its ramp-up period, Staff nonetheless  
24 believes the results of the High Efficiency AC Rebate component may not have been as effective  
25 as they could have been. APS acknowledges that there were at least two problems with this  
26 program component.

27 30. Where most customers were aware of Seasonal Energy Efficiency Ratio (“SEER”)  
28 as an energy-efficiency indicator for central HVAC units, most customers and even many

1 contractors were unfamiliar with EER. Furthermore, the EER values for specific HVAC units  
2 were difficult to find. Thus, providing data to confirm that equipment meets the minimum EER  
3 requirement to qualify for a rebate proved to be an impediment to the delivery of the program from  
4 the contractor's perspective. In APS' 13-month refile, the Company requested changes to  
5 remove the EER requirement. However, the EER requirement is a measure of energy efficiency at  
6 a constant 95 degrees as opposed to SEER which is a measure of energy efficiency over an entire  
7 cooling season, and thus the EER requirement is very relevant to the warmer Arizona desert region  
8 climate. Furthermore, the Federal Tax Credit program is based upon a combination of SEER/EER  
9 requirements. Probably because of the Federal Tax Credit program, the primary database that  
10 contractors use to verify a wide range of equipment information (the ARI Directory of Certified  
11 Product Performance) was updated in March 2007 to include significantly more information on  
12 equipment EER levels. Recognizing that this problem had essentially resolved itself, APS  
13 withdrew its request to remove the EER as a measure of energy efficiency related to the High  
14 Efficiency AC Rebate component of its Residential HVAC Program.

15 31. Another problem that the High Efficiency AC Rebate program experienced was that  
16 customers and contractors were having difficulty finding package air-conditioning and heat pump  
17 units available on the marketplace that would meet the APS rebate specifications. Indeed, there  
18 are only 173 package models on the market that qualify for the Tier 1 \$250 rebate and zero  
19 package models that qualify for the Tier 2 \$400 rebate. There was less of a problem in finding  
20 qualifying split systems that met the rebate requirements, because split systems are inherently  
21 more efficient and generally have higher SEER and EER specifications. In this application for  
22 expedited approval of modifications of certain DSM programs, the Company is proposing  
23 modifications to the program's EER requirements as outlined in the following table to rectify the  
24 problem.

25 32. Residential HVAC Program – Current and APS Proposed SEER and EER  
26 Requirements.

27 ...

28 ...

RESIDENTIAL EXISTING HOMES HVAC PROGRAM Current and APS Proposed SEER and EER Requirements		
Current Minimum Levels	Proposed Minimum Levels	Incentive
14 SEER / 12 EER	14 SEER / 11.5 EER	Tier 1 = \$250
16 SEER / 14 EER	16 SEER / 12.25 EER	Tier 2 = \$400

33. Under the APS proposed requirements, there would be 304 package models available that qualify for the Tier 1 \$250 rebate and nine package models that qualify for the Tier 2 \$400 rebate.

34. Staff investigated the possibility of recommending separate SEER/EER requirements for package systems and for split systems. Staff also looked at the United States Department of Energy requirements which specified separate requirements for central air conditioning systems and for heat pump systems. In both cases, the complexities of the requirements overshadowed the advantages. Staff also looked at air-conditioning rebate DSM programs in effect in other southwestern states and concluded that there were many and diverse ways to specify program requirements, but no consensus or preferred method surfaced. Staff spoke with local heating and air-conditioning contractors to gain their perspective on the problems and potential solutions regarding APS' program. Staff concluded that the contractors feel that APS' proposed solution to lower the EER requirement would solve the equipment availability problem.

35. Both APS and Staff have performed analyses of the new requirements to determine if the measures would remain cost-effective at the new EER levels, and have found that they do remain cost-effective. Staff performed the Societal Cost Test at each of six relevant SEER/EER levels, and found each combination to be cost-effective.

36. Staff has recommended that APS reduce the minimum EER required to qualify for a rebate under the Company's "High Efficiency AC Rebate" component of its Residential HVAC Program, to (14 SEER and) 11.5 EER for a Tier 1 \$250 rebate and to (16 SEER and) 12.25 EER for a Tier 2 \$400 rebate, with a conditional effective date.

37. However, Staff is concerned that all of the measures ordered in Decision No. 68648, April 12, 2006, are meant to work together to realize the full potential of energy savings in

1 the Residential HVAC Program. The Quality Installation measure is most directly associated with  
2 realizing the full potential for energy savings from new HVAC equipment installed under the  
3 rebate program. The HVAC System Testing and Repair measure is more closely associated with  
4 gaining maximum efficiency from existing central heating and cooling systems, but is nonetheless  
5 an important component of the program and could be relevant to new installations as well.

6 38. Staff believes that it may not be advantageous to correct the EER problem, resulting  
7 in more installations of energy-efficient equipment and more rebates paid, if the Quality  
8 Installation measure is not available to ensure that the full energy-efficiency potential of those  
9 incremental units is realized. It is possible that the incremental Tier 1 and Tier 2 rebates paid  
10 would not generate the expected energy efficiency that ratepayers would be ultimately paying for  
11 in the form of rebates. APS has indicated to Staff that the Quality Installation measure would be  
12 implemented statewide by August 1, 2007, and hopefully this will have been accomplished prior to  
13 Commission action on this Application. In order to ensure that these two measures are in lockstep,  
14 however, Staff has recommended that any reductions to minimum EER requirements to qualify for  
15 a rebate, under the Company's "High Efficiency AC Rebate" component of its Residential HVAC  
16 Program ordered herein, become effective only concurrent with or after the Quality Installation  
17 measure is fully implemented, meaning that the measure is readily available to all residential  
18 customers throughout APS' service territory statewide.

19 39. Staff has become aware of considerable activity currently underway at APS to  
20 implement the HVAC System Testing and Repair measure. APS is working with the Arizona  
21 Department of Commerce Energy Office and is planning to partner with Energy Star for branding  
22 the program and with Foundation for Senior Living Home Improvements ("FSL Home  
23 Improvements") for contractor training and referrals. FSL Home Improvements has expanded  
24 beyond its initial work in low income weatherization and senior home improvements and has  
25 become a local authority in home energy-efficiency testing, repair, and training. Staff has  
26 recommended that APS place a high priority on implementing the HVAC System Testing and  
27 Repair measure as soon as possible and report its progress to Staff no less than monthly until the  
28 measure is fully implemented statewide.

CONCLUSIONS OF LAW

1  
2 1. APS is certificated to provide electric service as a public service corporation in the  
3 state of Arizona.

4 2. The Commission has jurisdiction over APS and over the subject matter in this  
5 Application.

6 3. The Commission, having reviewed the application and Staff's Memorandum dated  
7 August 7, 2007, concludes that it is in the public interest to authorize \$3.5 million additional  
8 annual DSM funding for NR Existing Program rebates and incentives, to remove the 52 percent  
9 budget cap for NR Existing Program rebates and incentives, to reduce the EER criteria to qualify  
10 for a rebate in the Residential HVAC Program, to require that the reduced EER criteria become  
11 effective only concurrent with or after the Quality Installation measure is fully implemented, and  
12 to require APS to place a high priority on implementing the HVAC System Testing and Repair  
13 measure.

ORDER

14  
15 IT IS THEREFORE ORDERED that authorization for \$3.5 million additional annual DSM  
16 funding for APS' NR Existing Program rebates and incentives is hereby granted, and APS shall  
17 modify its Rebates and Incentives program budget for 2007 and subsequent years to reflect the  
18 additional funding.

19 IT IS FURTHER ORDERED that the existing 52 percent budget cap for the combined  
20 expenditure for Rebates and Incentives be removed from the NR Existing Program beginning in  
21 the 2007 budget year.

22 IT IS FURTHER ORDERED that APS reduce the minimum EER required to qualify for a  
23 rebate under the Company's "High Efficiency AC Rebate" component of its Residential HVAC  
24 Program, to (14 SEER and) 11.5 EER for a Tier 1 \$250 rebate and to (16 SEER and) 12.25 EER  
25 for a Tier 2 \$400 rebate, with a conditional effective date.

26 IT IS FURTHER ORDERED that any reductions to minimum EER requirements to qualify  
27 for a rebate, under the Company's "High Efficiency AC Rebate" component of its Residential  
28 HVAC Program ordered herein, become effective only concurrent with or after the Quality

1 Installation measure is fully implemented, meaning that the measure is readily available to all  
2 residential customers throughout APS' service territory statewide.

3 IT IS FURTHER ORDERED that APS place a high priority on implementing the HVAC  
4 System Testing and Repair measure as soon as possible and report its progress to Staff no less than  
5 monthly until the measure is fully implemented statewide.

6 IT IS FURTHER ORDERED that this Decision shall become effective immediately.

7  
8 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

9  
10 \_\_\_\_\_  
11 CHAIRMAN

COMMISSIONER

12  
13 \_\_\_\_\_  
14 COMMISSIONER

COMMISSIONER

COMMISSIONER

15 IN WITNESS WHEREOF, I BRIAN C. McNEIL, Executive  
16 Director of the Arizona Corporation Commission, have  
17 hereunto, set my hand and caused the official seal of this  
18 Commission to be affixed at the Capitol, in the City of  
19 Phoenix, this \_\_\_\_\_ day of \_\_\_\_\_, 2007.

20 \_\_\_\_\_  
21 BRIAN C. McNEIL  
22 Executive Director

23 DISSENT: \_\_\_\_\_

24 DISSENT: \_\_\_\_\_

25  
26 EGJ:JDA:lhv\JFW

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